

# Improving smallholders competitiveness :

## role of Cirad and PalmElit



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# How to improve smallholders competitiveness ?



## Role of PalmElit and Cirad:

### ❑ Smallholdings and smallholders:

- From African context to our 6 wills
- Actual spontaneous development

### ❑ Inclusive business project

- Improving competitiveness of existing smallholdings
- Improving competitiveness of next smallholdings
- Building partnerships for the project

# Oil palm smallholdings in Africa: about 80% of ha

1<sup>st</sup> will: PalmElit & Cirad => work on African smallholdings

While 41% of the world oil palm area is owned by smallholders



Rafflegeau S., Losch B., Daviron B., Bastide P., Charmetant P., Lescot T., Prades A., Sainte-Beuve J. 2015. Contributing to production and to international markets. In : Sourisseau Jean-Michel (ed.). *Family farming and the Worlds to come*. Dordrecht : Springer [Pays-Bas], p. 129-144.

# Huge diversity of smallholders

2<sup>nd</sup> will: PalmElit & Cirad => work for all smallholders types

	Entrepreneurial agriculture			Family agriculture
	<i>Capitalist firm</i>	<i>Managerial enterprise</i>	<i>Family business farm</i>	<i>Family farm</i>
<b>Labor</b>	Exclusively salaried employees		Mixed, some presence of permanently salaried employees	Family dominance, no permanently salaried employees
<b>Capital</b>	Mobil and held by shareholders	Not mobil and held by shareholders	Held by the family or a family association	Held by the family rarely a family association
<b>Management</b>	Technical		Family or technical	Family
<b>Home consumption</b>	Agro-industries	Not relevant	Smallholders	partial to full
<b>Legal status</b>	Limited liability concern	Limited liability or other com		farm status, company status, ope
<b>Land status</b>	Property or formal rental		Property or formal or informal rental	

**In synergy: in a cooperative, sharing a small-scale mill,...**  
**In competition : land access**

**Marzin J., Daviron B., Raffleageau S.** 2015. Family farming and other forms of agriculture. In : Sourisseau Jean-Michel (ed.). *Family farming and the Worlds to come*. Dordrecht : **Springer** [Pays-Bas], p. 71-89.



# Artisanal and industrial processes:

3<sup>rd</sup> will: PalmElit & Cirad => keep 2 ways for smallholdings development

**Allows development everywhere**  
**Many labours including women**  
**Sometime more incomes**  
**Lost of oil**  
**No effluent treatment**  
**Sometime high oil acidity**



**High oil extraction rate**  
**Controlled oil quality**  
**Effluent treatment**  
**Huge investment**  
**Localised development**



Traditional oil palm groves: specific of family farms in Africa => but out of development schemes

4<sup>th</sup> will: PalmElit & Cirad => improving competitiveness of palm groves



Only family farms

## TRADITIONAL GROVES AND PLANTATIONS

Niger Delta, Nigeria - One third of African Oil Palm area - traditional palm groves 1,1 million ha, medium and smallholders plantations 270.000 ha and agro-industrial plantations 110.000 ha. (PIND) 2011



# Planting material is the main limiting factor

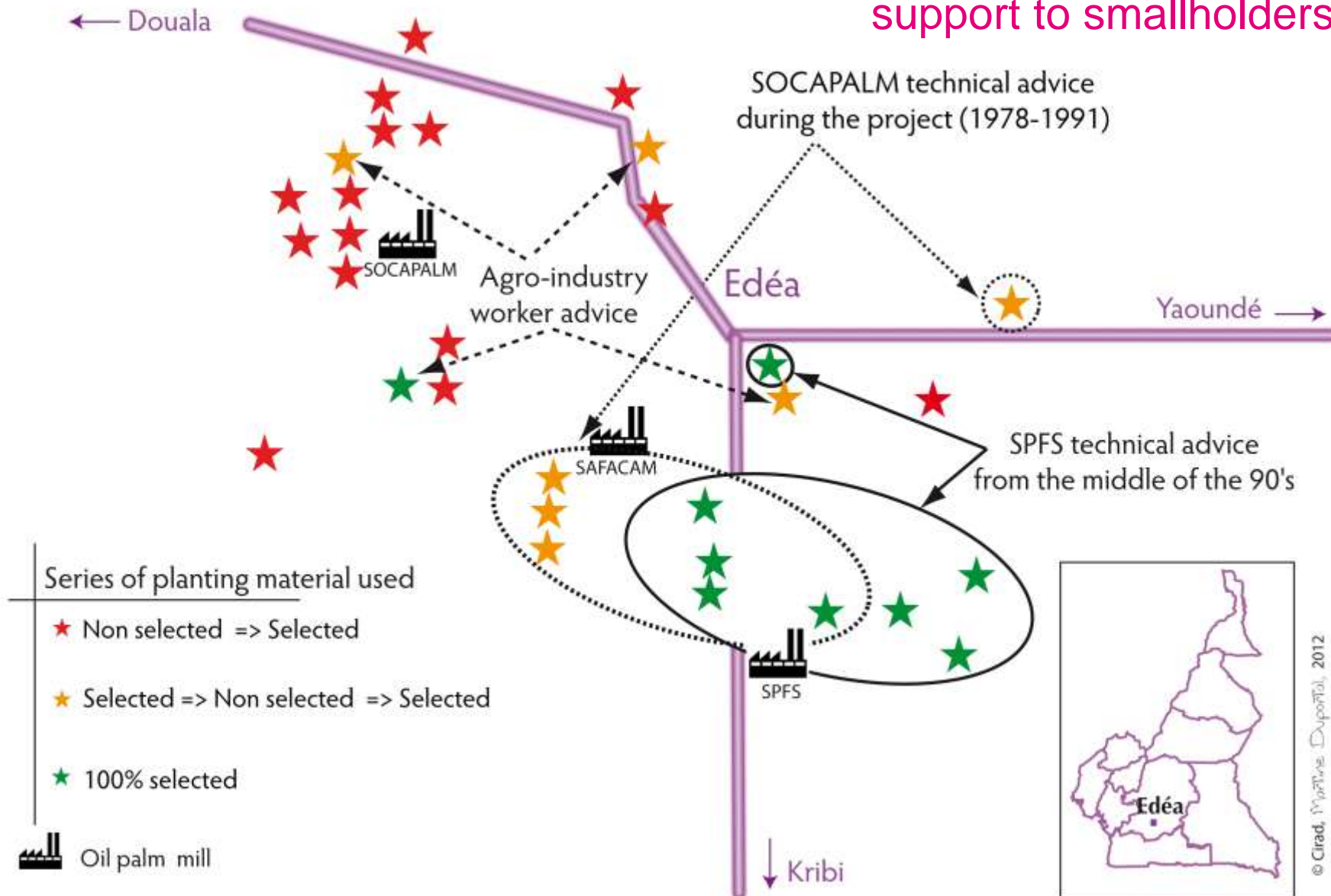
5<sup>th</sup> will: PalmElit & Cirad => focus on planting material limiting factor

	Types of planting material more generally used		
	Selected (100% T)	Unselected (25%D + 50%T + 25%P)	Local (99% D local)
Smallholders' main cropping systems			
Oil palm plantation with design ex: 143 palms/ha	X	X	
Wild grove + isolated palms in food crops plots		X	X
Expected yields (in % of selected oil palm yield in the same conditions)	100%	60% FFB 40% CPO	10%

**Cochard B.** et al. 2001. Intérêt des semences commerciales de palmier à huile.  
**Rafflegeau S.** 2008. Facteurs limitants et raisons des pratiques. Thèse Cameroun  
**Ndjogui T.E.** et al. 2014. Historique du secteur palmier à huile au Cameroun.

# Technical support helps smallholders to plant selected palms

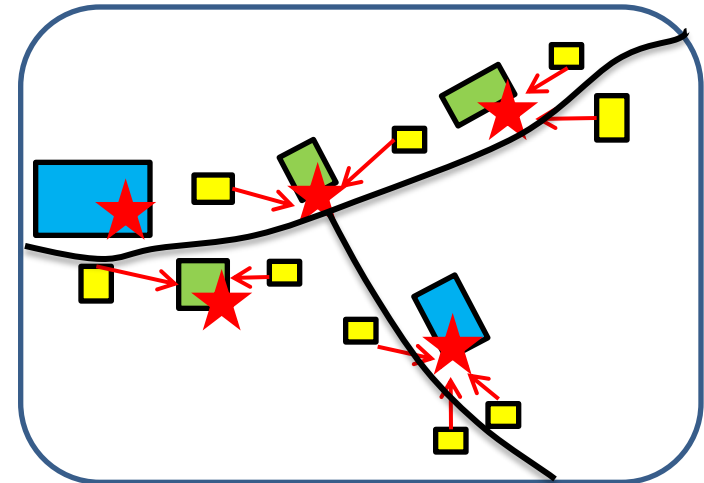
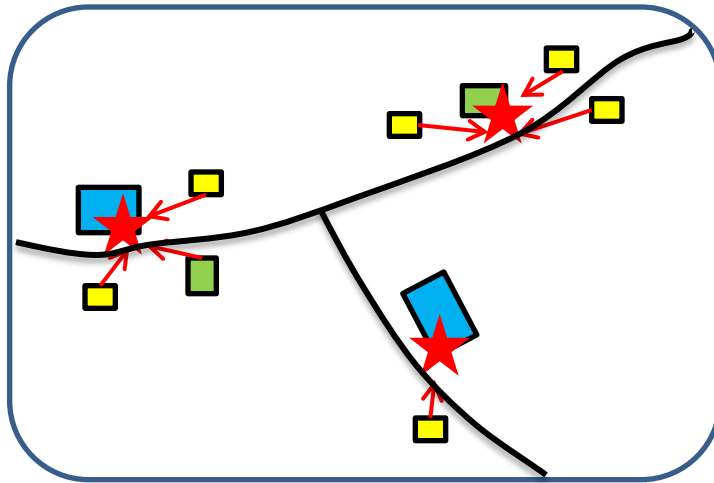
6<sup>th</sup> will: PalmElit & Cirad => work with local partners providing technical support to smallholders





# Actual spontaneous development Far away from oil palm mills

*By self funding and synergy between the different types of smallholders :  
Managerial enterprises & family business farms can invest in artisanal mills to operate  
their own production as well as subcontract with neighbours until the mill is saturated  
at the peak season.*



New planters and extension of initial smallholdings

Time

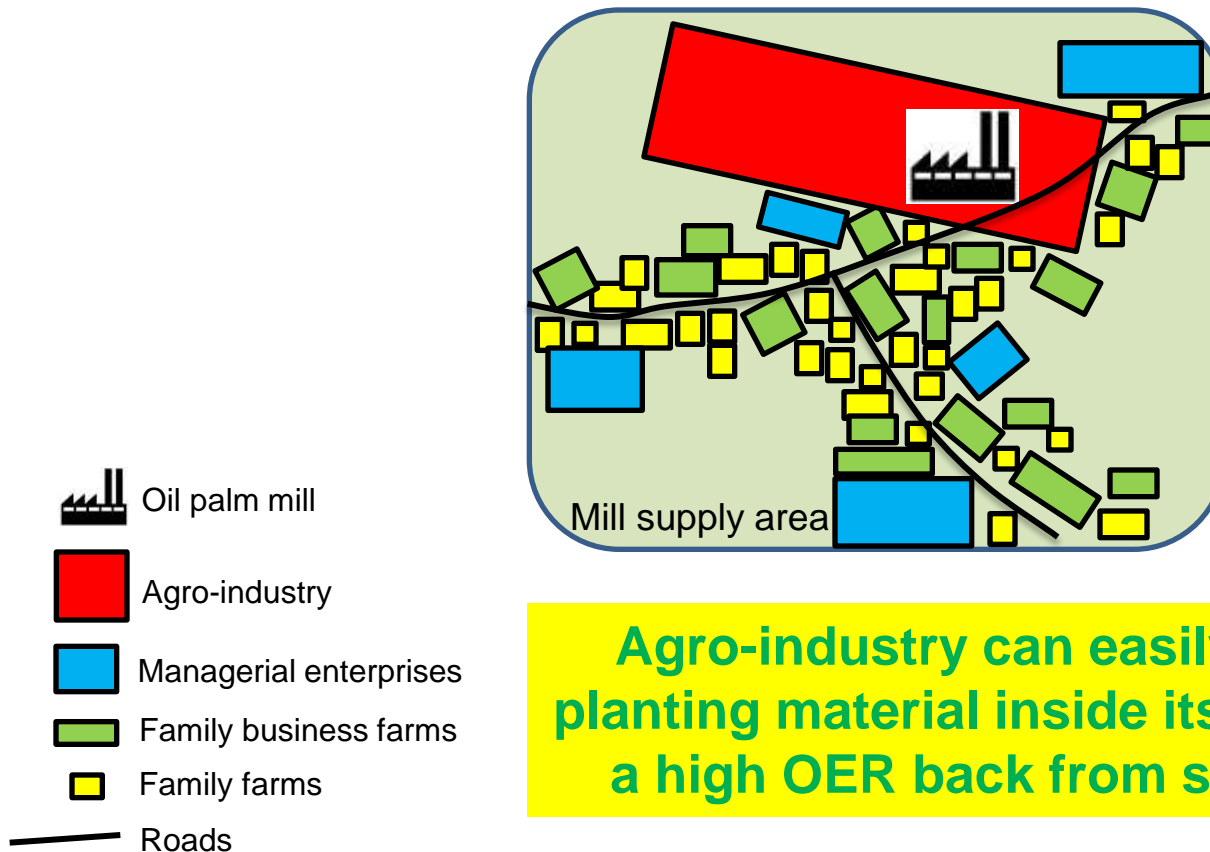
- Bunches processings
- ★ Artisanal mills
- Managerial enterprises
- Family business farms
- Family farms
- Roads

**Each planter find his planting  
material by himself  
=> unselected palms are planted**

# Actual spontaneous development Inside oil palm mill supply area

*By self funding and with competition between the different types of smallholders for land access and land titling inside the mill supply area.*

*The agro-industry can be passive or can invest in a « win-win » relationship with smallholders by providing them selected planting material, fertilisers ,... against their FFB.*



**Agro-industry can easily spread high quality planting material inside its mill supply area to get a high OER back from smallholders bunches**



# How to improve smallholders competitiveness ?



from our 6 wills  
Actual spontaneous  
development

Inclusive business project



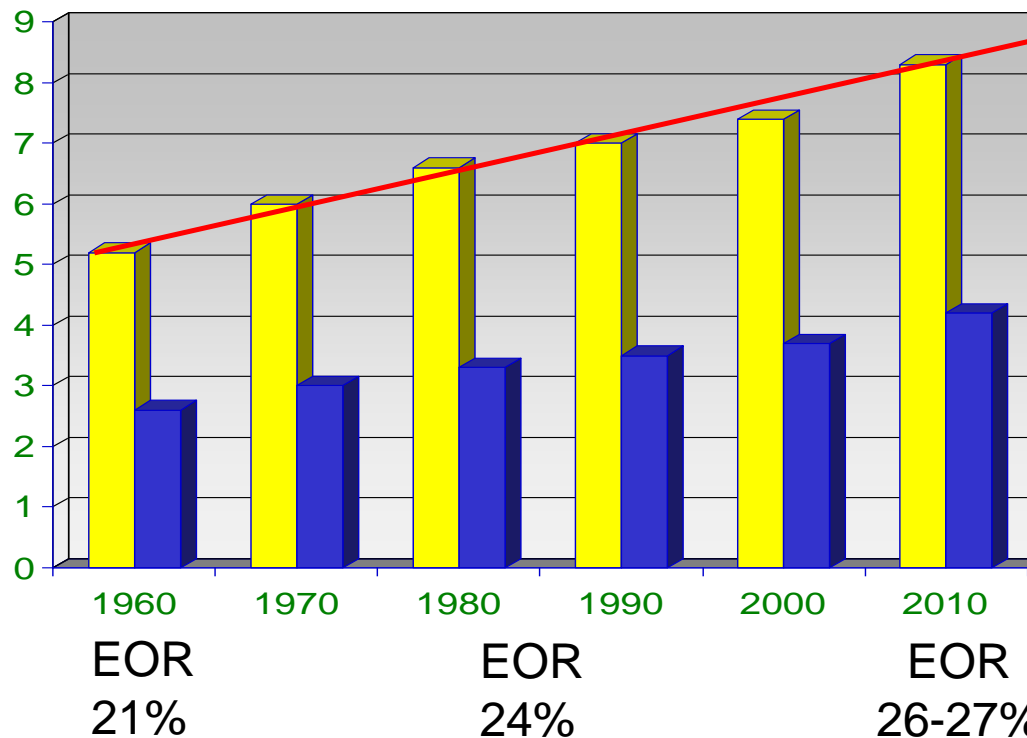
# Improving competitiveness of existing smallholdings

PalmElit & Cirad => 60% progress (FFB + EOR) / 50 years



## Results : genetic progress included in CIRAD® seeds

Genetic value of Cirad® Seeds  
(other than fertilization and management progress)

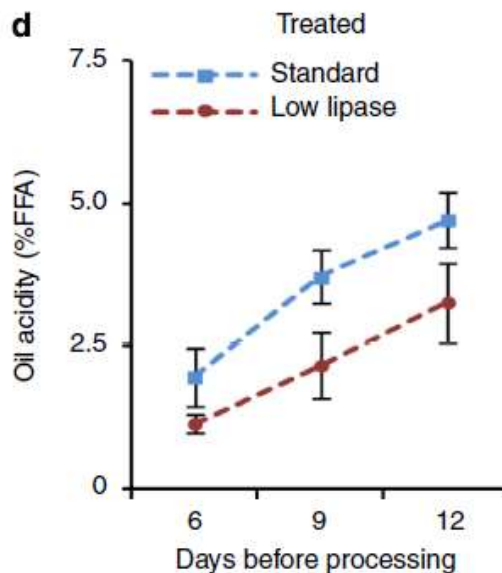
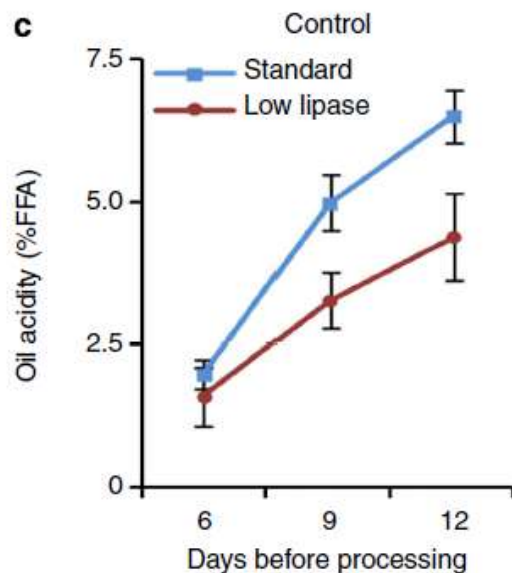
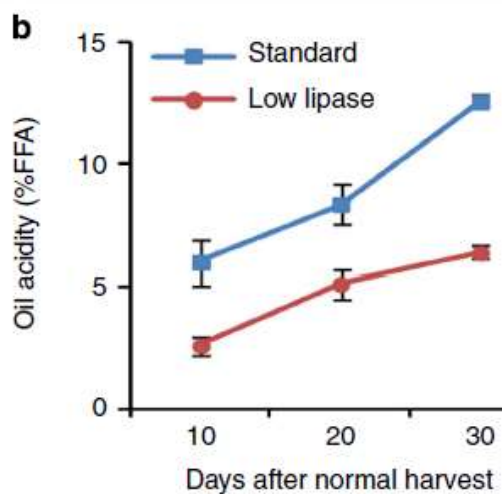
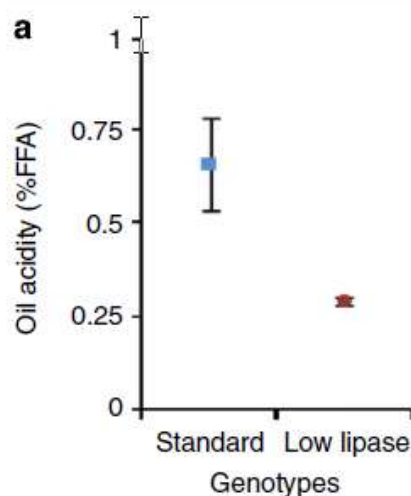


1.2%/year  
55 kg/year



■ Nord sumatra  
(no water deficit)  
■ Côte d'Ivoire  
(-340 mm/an)

# Improving competitiveness of existing smallholdings



PalmElit & Cirad  
New PM: Low Lipase

- Less strict harvest calendar
- Less lost of over-ripe FFB
- Less FFA in artisanal red oil palm : better taste and longer storability

**Morcillo, F.** et al. Improving palm oil quality through identification and mapping of the lipase gene causing oil deterioration. **Nature Commun.** 4:2160 doi: 10.1038/ncomms3160 (2013).

## Replanting with high yielding and low lipase planting material:

- Progressive replanting of isolated palms in food crop plots, of palm groves owned by people or by community, without any other main changes of the cropping system which is convenient for some family farmers, helped by government extension services
- => New, for family agriculture, with no environmental impact
- For all smallholder types, progressive and regular replanting of smallholders' plantations, starting by the plots with the less producing planting material, the oldest plots, the plots with high mortality



# Improving competitiveness of existing smallholdings

Replanting with high yielding and low lipase planting material:

Allows development everywhere  
Many labours including women  
Sometime more incomes  
Lost of oil  
No effluent treatment  
↓ Sometime high oil acidity



↗ High oil extraction rate  
↗ Controlled oil quality  
Effluent treatment  
Huge investment  
Localised development





## How to improve competitiveness of next smallholdings ?



Providing an access to high yielding and low lipase planting material for every types of smallholders

1. Promoting smallholders association far away from mills to get an access to high quality planting material, supported by development funds managed by local projects
2. Promoting inclusive business association for new oil palm development on already farmed land, changing partially land use in farms, with zero deforestation of HCV area
3. Where agro-industrial mills are not saturated during peak season, promoting extensions of smallholdings inside mill supply area by win-win relation (cost price seedlings)

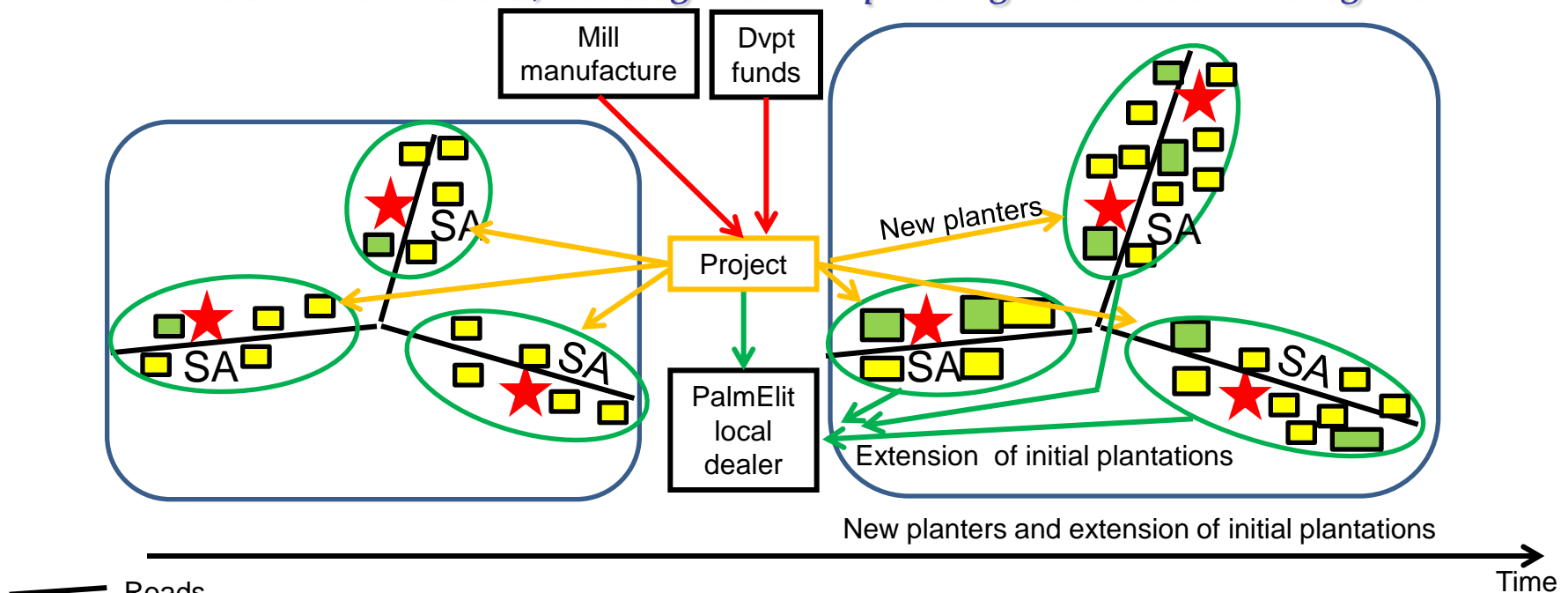
# Far away from mills:

## Smallholders association, development funds and project

*The development funds finance local projects. Smallholders association benefit from:*

- *Planting material to create the first oil palm plot (seedlings for 2ha)*
- *Small-scale processing units managed by smallholders association (SA)*

*For the extensions, the SA gather the planting material orders together*





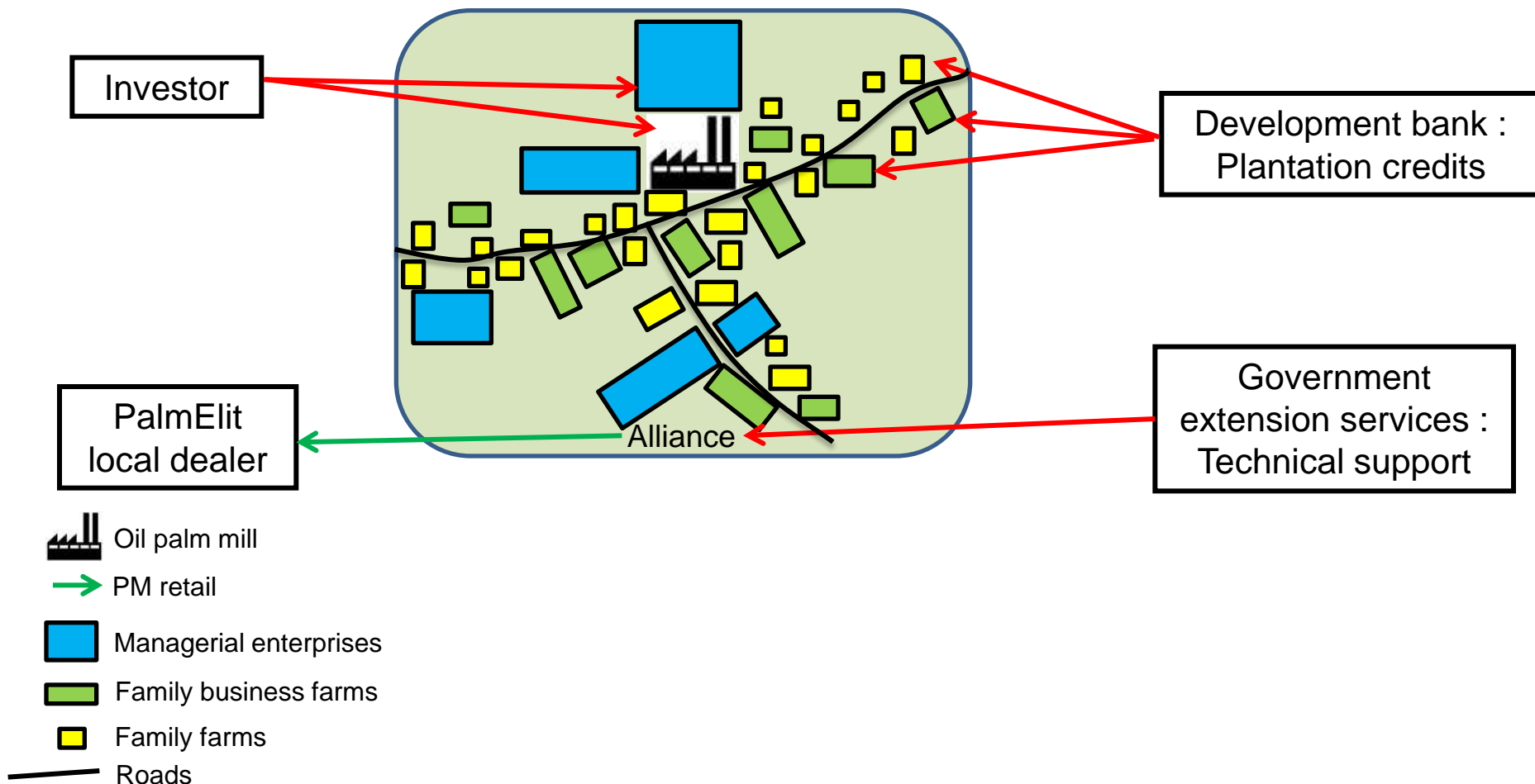
# Oil palm development on already farmed land

## Inclusive business association “by alliance sharing”

*The investor build the oil palm mill and holds 50% of the Alliance sharing.*

*Government helps to create Alliance and bring technical support.*

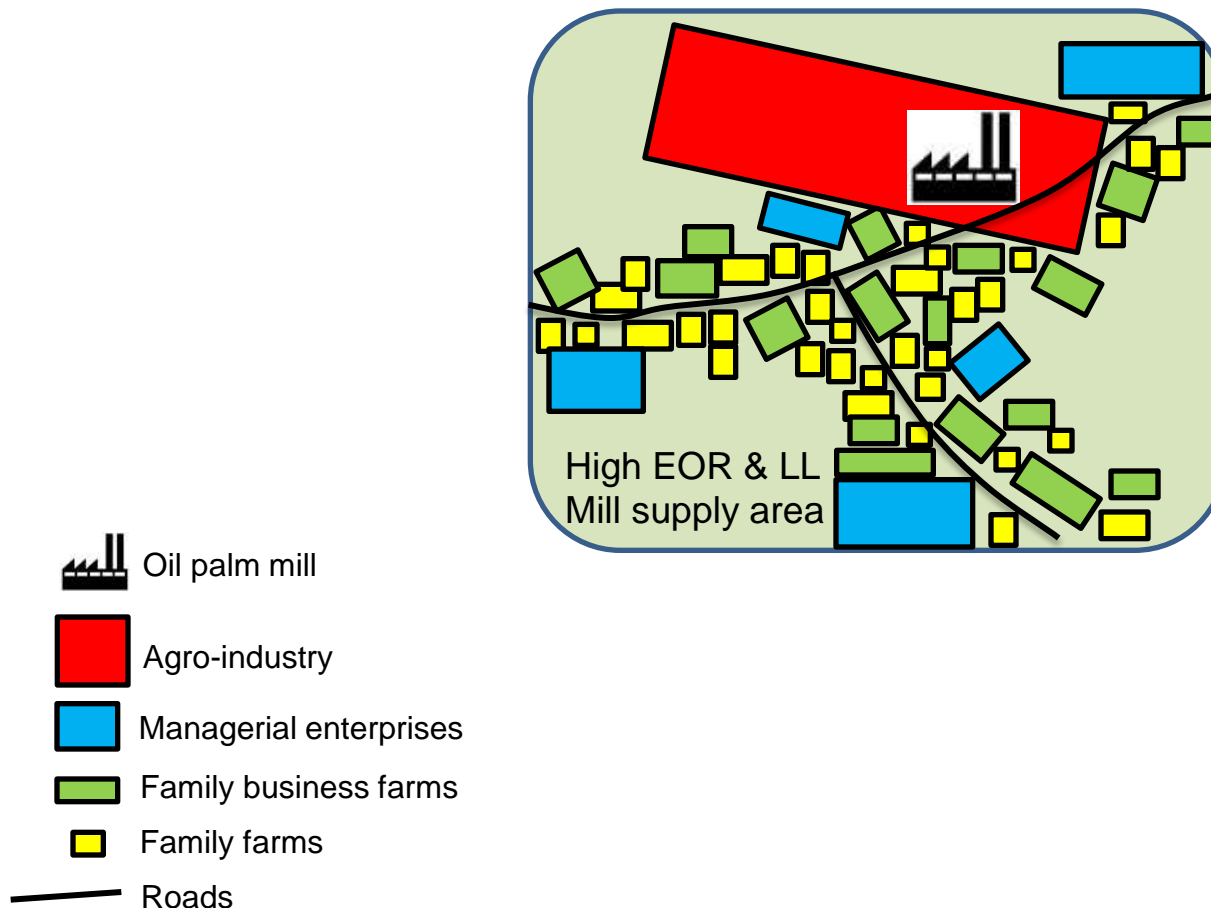
*Farmers are benefiting from plantation credits guaranteed by the mill. They also participate in decision-making by holding together 50% of the share according to their planted areas.*



# Where mills are not saturated during peak season

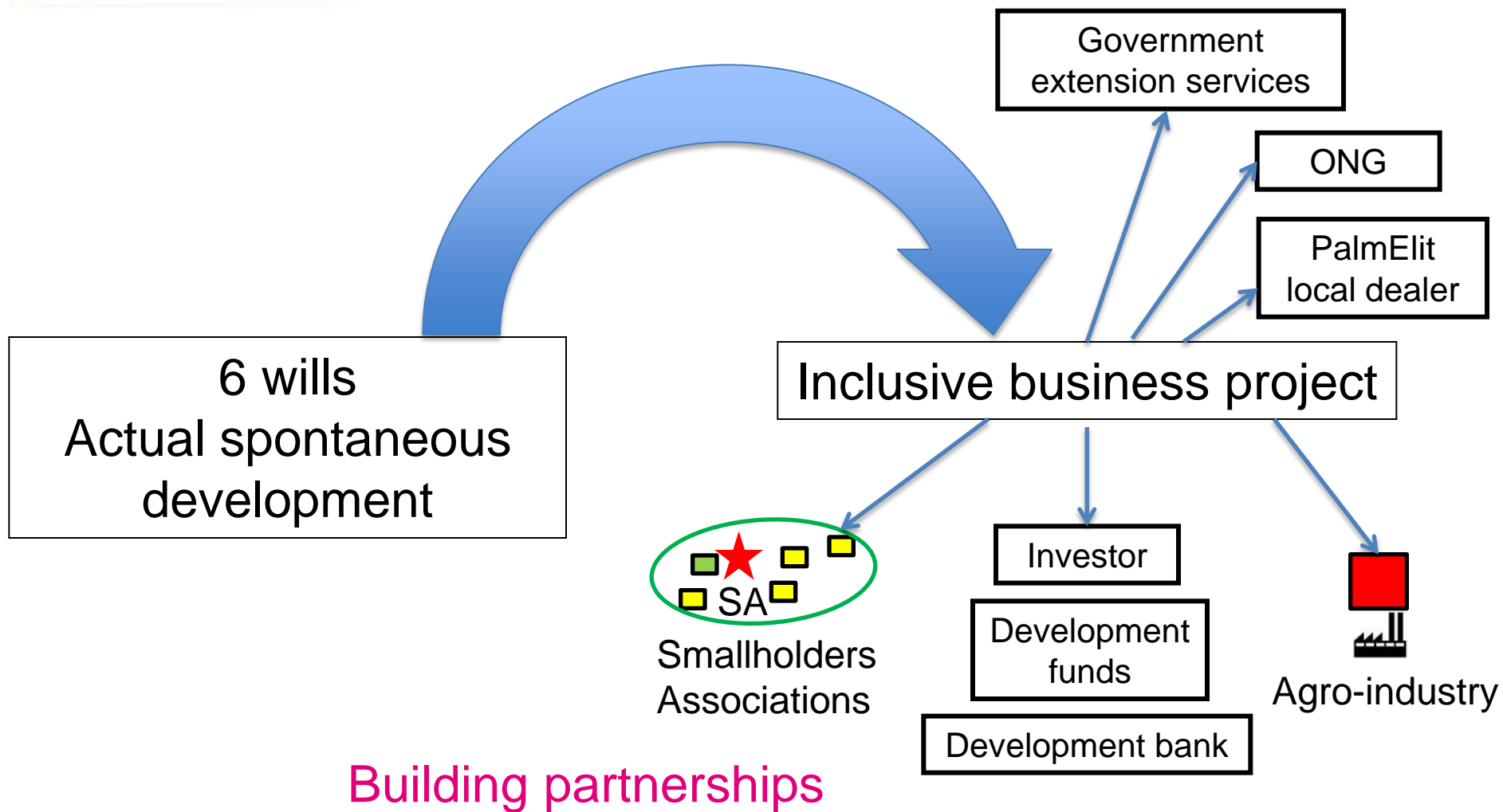
## Smallholder development with an agro-industry

*The agro-industry provides cost price selected seedlings to smallholders interested to extend their oil palm area. By the way, the agro-industry spreads in its mill supply area, low lipase selected oil palm with better yields and high oil extraction rate.*





# How to improve smallholders competitiveness ?







Thanks for  
your attention